

**alimentarium**

# Food

The essence of life



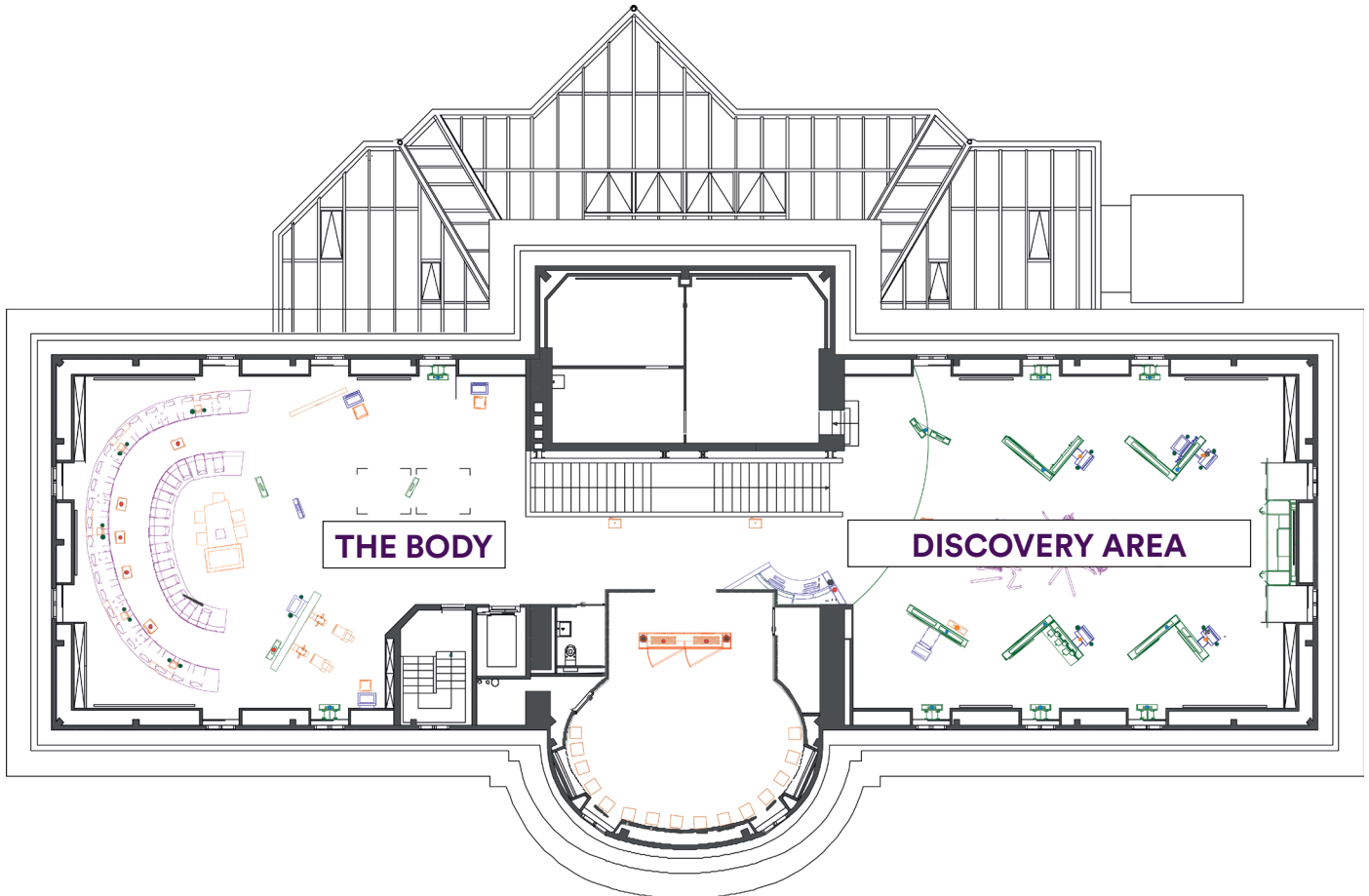
**Pupils'  
Guide**



# 1st FLOOR



# 2nd FLOOR



# Discovering the exhibition

## THE FOOD SECTOR

1<sup>st</sup> floor

There are three main themes to this sector: Composition / Production / Processing  
Before starting your visit, think about how you would answer: **What do I eat?**

### Composition

This section uses interactive screens to present the diversity of food derived from nature. It shows the different natural stages of growth (production), then shows an end product created by humans (processing), before rediscovering the initial food source.

*Look carefully at the sixteen sources of food on the big screens. Can you find eight end products? Here is an example to get you started: Wheat is used to make bread.*

1. Vitelotte potatoes...
2. Water buffalo milk...
3. Durian...
4. Pig...
5. Sunflower...
6. Giant water bug...
7. Tilapia...
8. Wakame...

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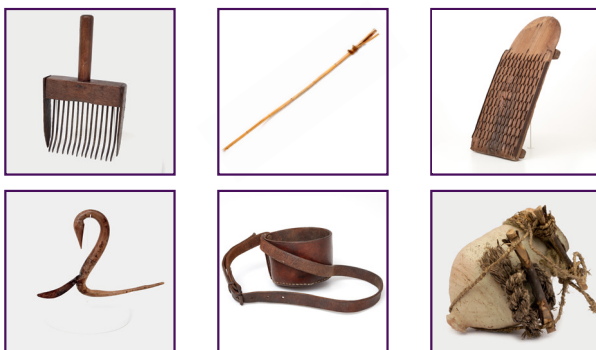
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### Production

While ants have always cultivated the soil and reared other species, human beings harvested and hunted long before they became farmers. They then improved techniques, produced more than necessary and traded the surplus. Industrialisation led to the emergence of vast food production systems and our food now stems from all over the world.



*Which of these six objects is the odd one out? The showcases presenting cultivation and breeding may help you find the answer.*

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What is this object used for?

- To make giant ice cubes
- To grow cubic watermelons
- As an aquarium

The globalisation of food is not a modern phenomenon. Human beings everywhere have always been attracted to new ways of eating. The food that we eat in Europe today has been influenced by foreign civilisations.

Do you know where these foodstuffs come from? Link the food with its place of origin. The terminals that present food systems may be of help.

- |            |   |   |   |
|------------|---|---|---|
| Saffron    | ● | ● | Africa  |
| Buckwheat  | ● | ● | China   |
| Tomato     | ● | ● | Central America   |
| Kiwi fruit | ● | ● | Europe  |
| Corn       | ● | ● | Near and Middle East                                    |
| Watermelon | ● | ● | Central Asia  |
| Cabbage    | ● | ● | China, hence it is also called the 'Chinese gooseberry' |
| Pear       | ● | ● | South America   |

In Switzerland, we eat food from around the world. Place the food in the correct place on the world map.

- Oranges: Brazil
- Raisins: United States
- Hazelnuts: Turkey
- Rice: China

Notice the distance food travels to reach Switzerland.



# Processing

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Most food undergoes some form of processing before it is consumed. Manufacturing makes cereals edible for example. Preserving makes storage and transportation possible, while preparing food includes cooking dishes. Such operations are performed by specialist artisans, industry or in our own homes.



What is this object used for?

- To whisk egg whites
- To make mayonnaise
- To whip cream into butter

Various techniques for preserving food have been developed so that food can travel without losing its taste or nutritional qualities...

Link the preserving techniques used to transform different foodstuffs:

- |               |   |   |
|---------------|---|---|
| Smoking       | ● | ● grapes to raisins                           |
| Fermentation  | ● | ● fresh cod to dried and salted cod           |
| Salting       | ● | ● strawberries to jam                         |
| Appertisation | ● | ● fresh fish to smoked fish                   |
| Dehydration   | ● | ● fresh haricot beans to frozen haricot beans |
| Deep-freezing | ● | ● milk to cheese                              |

The final part of the *Food* sector looks at packaging. Wrappers not only protect produce, but are a means of providing a range of information about the product (origin, ingredients, nutritional values) and, above all, a way of conveying values and beliefs.

Suggest a great slogan to make people want to buy a Kit Kat!



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## THE SOCIETY SECTOR

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In this sector, the most important question is: **How do I eat?**

What are my tastes, my food choices? How does society influence me? The human diet is above all a social and cultural indicator, which gives us clues to help us understand ourselves and other people. Eating is not only a principal biological need; it has an important social function too.

There are three main themes in this sector: Representation / Consumption / Eating habits

### Representation

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By learning the codes of the social group in which they grow up, children assimilate the dietary and culinary rules which govern it. For example, in the West, they are taught that it is 'not the done thing' to burp at the table, while on the other side of the world, such behaviour is considered to be the height of good manners! By imitating the people around them, children forge their social ties and their feeling of belonging to a group.

There is something very warm and comforting about our grandmothers' recipes... In fact, if you think about it, we all have a recipe that has been passed on by a relative or friend and that still stirs up wonderful feelings when we taste its familiar flavours.

*Write down your favourite recipe and share it with your classmates.*

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# Consumption

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Our eating habits vary according to our desires, our needs and our means. Some types of food convey traditions that we keep alive through the acts of eating and cooking. Think of the various eating habits around the world. Which foodstuffs are consumed the most? Where, when and by whom?

Let's talk about a much-loved drink.

Chocolate was first consumed as a beverage and this is how the upper classes in Europe discovered it. Chocolate in solid form was only made from the latter half of the 19<sup>th</sup> century onwards, but soon became the preferred cocoa-based product.

*Find this 18th-century drinking chocolate kit and describe the utensils required to make this tasty drink.*



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*Put the different stages of chocolate production in the right order:*

*milling, conching, crushing, moulding, cleaning, grinding, roasting, mixing with sugar, pressing, tasting*

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**Roasting:** The cocoa beans are grilled to release their aroma. Coffee, almonds and hazelnuts can also be roasted.

**Crushing:** The cocoa beans are broken down to remove their shells.

**Milling:** The mix of crushed, roasted cocoa beans goes through special mills to produce cocoa paste.

*These five objects are in the display cases in front of the large mural of pictures. Which object is the odd one out?*



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## Eating habits

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“Tell me what you eat, and I will tell you what you are.” Brillat-Savarin’s words sum up the individual and collective impact of our food choices. They stem from our culinary education within the family circle; they influence and derive from other factors such as our health and financial situation, advertising, and environmental concerns. In short, other people’s choices.

If you look at the ten photos taken by Peter Menzel on the terminal about eating in the family circle, you will notice that eating habits vary from one society to another, and that numerous factors influence the menu. The photographer presents families from around the world and the food they eat in one week.

*Compare the food eaten by the Mustapha family (Chad) with that of the Casales family (Mexico). Why are there so many differences?*

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On the other terminal (lake side), you can discover pictures of school canteens across the world.

*From the ten countries shown, which meal is most similar to what you eat at school? Which do you find the most appetising? Why?*

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*Find the only meal with fish.*

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This sector invites you to reflect on two fundamental questions: **How do I perceive what I eat?**  
**Why do I eat?**

To answer these questions, the first section looks at how our brains perceive food, in particular through our five senses. You are also invited to discover the results of recent research in the field of sensory science. The second part focuses on how digestion works, the role of calories and the hormonal mechanisms which govern our relationship with food.

Two main themes are presented here: senses on call; nutrition and food.

## Senses on call

Our brains use our five senses to invent the world! Try a little experiment for each sense.

### SIGHT

Sight is responsible for 80% of all sensory perceptions. It enables us to instantly perceive and analyse a whole range of information: colours, shapes, movement and appearance. At a glance, we know if an apple is ripe or what its texture is like. The appearance food has influences how we react to food, hence the expression 'You eat with your eyes first'.

*Link the following information regarding the visual aspects of a tomato.*

- |         |   |   |        |
|---------|---|---|--------|
| Shape   | • | • | Solid  |
| Colour  | • | • | Smooth |
| State   | • | • | Round  |
| Texture | • | • | Medium |
| Size    | • | • | Red    |



### TASTE

Our tongues help us identify the basic taste of food: sweet, salty, sour or bitter.

*List the food according to its predominant taste (sweet, salty, sour, bitter).*

*Pineapples / clementines / coffee / walnuts / salt / sugar / bananas / grapefruit / vinegar / jam / cauliflower / gherkins / cocoa / ham / cheese / endives / lemons / pears / crisps / honey*

Sweet: \_\_\_\_\_

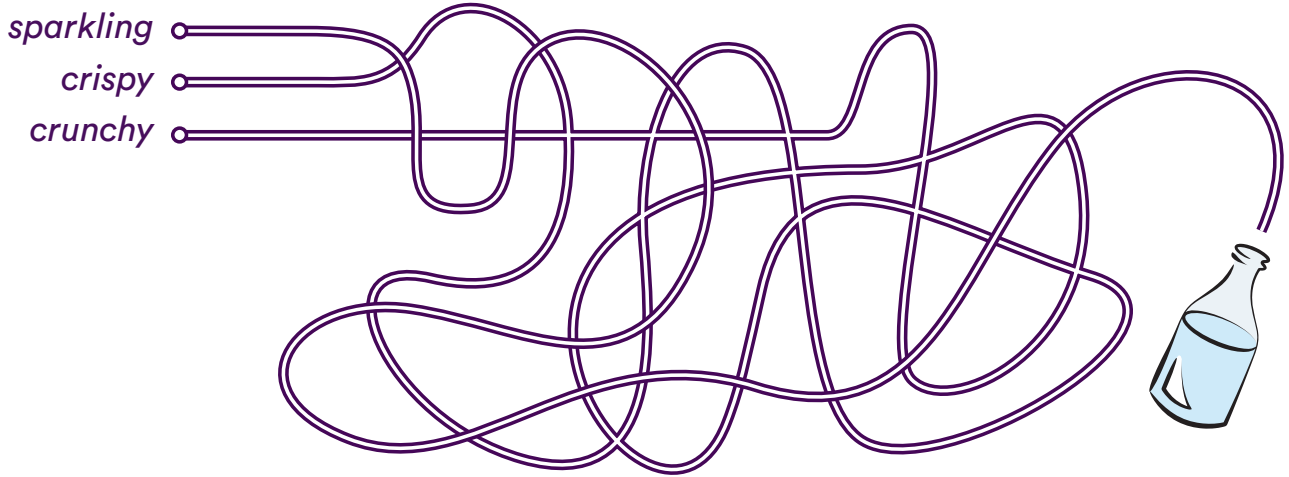
Salty: \_\_\_\_\_

Sour: \_\_\_\_\_

Bitter: \_\_\_\_\_

## HEARING

Our ears provide information on external noises, as well as on noises in our mouths. The sounds made by food are closely linked to its texture. Over a lifetime, our brains store thousands of typical sound patterns, like the sound of an apple as we bite it.



## SMELL

Our noses identify odours while our brains learn them, one by one. Thanks to our olfactory neurons, over time our brains could recognise between 3000 and 15 000 odours.

*Smell the two odours presented in the exhibition, then think of what they evoke for you. A memory? A place? A person? etc.*

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## TOUCH

Our skin provides us with a whole range of information about the texture and temperature of the world around us. When we feel or chew a piece of food, our muscles and joints work to contort or crush it. The perception of textures depends on the action performed.

*List a few foodstuffs for each texture...*

Soft: \_\_\_\_\_

Rough: \_\_\_\_\_

Sticky: \_\_\_\_\_

Hard: \_\_\_\_\_

Liquid: \_\_\_\_\_

# Nutrition and food

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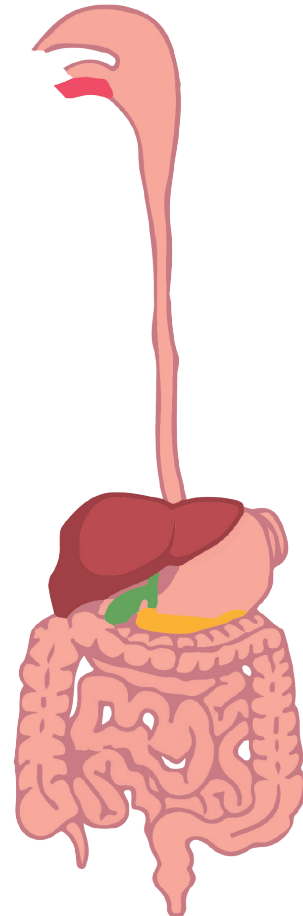
## DIGESTION

What happens to food once you put it in your mouth? After cutting and crushing it with your teeth, you swallow it. It then embarks on a long journey which ends in the toilet! Between your mouth and your stools, a mechanical and chemical process reduces the food into molecules that are small enough for your body to be able to absorb them. Approximately 95% of the absorption of nutrients occurs in the small intestine.

*Label these organs on the diagram.*

*If you'd like some help, go inside our giant digestive tube!*

- small intestine
- mouth
- stomach
- large intestine
- oesophagus



## REPRESENTATIONS OF A BALANCED DIET

The food pyramid is a way of using an image to explain how to eat a balanced diet.

*Complete the sentences! Use the interactive station next to the digestive tube to help you.*

In Japan, the pyramid is in the shape of a \_\_\_\_\_ whereas in Benin, it is in the shape of a \_\_\_\_\_. Pyramids don't just come in different shapes. They also vary in content.

*Name a foodstuff that you find on the Benin pyramid but not on the Japanese one.*

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TO SPARK DISCUSSION IN CLASS...

Eating is not a mundane act, it raises a number of important issues:

**Political issues**

*How can we feed the whole planet when we know that one sixth of the world's population is going hungry? Technical advances and the globalisation of trade have only a small impact on the situation.*

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**Environmental issues**

*How will we be able to feed ten billion humans in the future, without depleting natural resources?*

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*In Switzerland, 2.3 million tonnes of food are thrown away each year. Food is wasted at every stage of the chain, from the producer to the consumer. How can we reduce food waste?*

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**Social issues**

*What will be on our plates in the future? Less meat, more insects, functional food (food which is thought to improve our health), low-fat, low-sugar, organic, non-GMO food, etc.*

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To find out more, visit [www.alimentarium.org](http://www.alimentarium.org) for our 'encyclopedia' of factsheets, as well as our online Collection of around 400 objects revealing the rich history of food. You can also play all the video games from our exhibition!





